

What is claimed is:

- 1 1. A liquid crystal display device with a
2 capacitance-compensated structure, comprising:
3 a gate line;
4 a gate electrically connected to the gate line;
5 a compensation structure connected to the gate; and
6 a drain having a first side opposite to a second side,
7 wherein the first side of the drain overlaps the
8 gate and the second side of the drain overlaps
9 the compensation structure.
- 1 2. The device as claimed in claim 1, wherein the
2 compensation structure extends from the gate line.
- 1 3. The device as claimed in claim 1, wherein the
2 compensation structure extends from the gate.
- 1 4. The device as claimed in claim 1, wherein the
2 compensation structure comprises two portions, in which one
3 extends from the gate line and the other extends from the
4 gate.
- 1 5. A liquid crystal display device with a
2 capacitance-compensated structure, having a gate line and a
3 data line to turn a thin film transistor on or off,
4 comprising:
5 a gate electrically connected to the gate line;
6 a drain having a first side opposite to a second side,
7 wherein a first parasitic capacitor is formed
8 between the first side of the drain and the gate

9 and a second parasitic capacitor is formed
10 between the second side of the drain and the
11 gate.

1 6. The device as claimed in claim 5, wherein a
2 capacitor dielectric layer of the first parasitic capacitor
3 comprises two portions, wherein one portion is a stacked
4 structure comprising a gate insulating layer, a
5 semiconductor layer, and a channel protection layer, and the
6 other portion is a stacked structure comprising the gate
7 insulating layer and the semiconductor layer, a capacitor
8 dielectric layer of the second parasitic capacitor is a
9 stacked structure comprising the gate insulating layer and
10 the semiconductor layer.

1 7. The device as claimed in claim 5, wherein the
2 second parasitic capacitor comprises the second side of the
3 drain and a compensation structure electrically connected to
4 the gate.

1 8. The device as claimed in claim 7, wherein the
2 compensation structure extends from the gate line.

1 9. The device as claimed in claim 7, wherein the
2 compensation structure extends from the gate.

1 10. The device as claimed in claim 7, wherein the
2 compensation structure comprises two portions, wherein one
3 portion extends from the gate line and the other portion
4 extends from the gate.

1 11. A liquid crystal display device with a
2 capacitance-compensated structure, comprising:
3 a first process layer comprising a gate line, a gate,
4 and a compensation structure, wherein the gate is
5 electrically connected to the gate line and the
6 compensation structure connects to the gate; and
7 a second process layer comprising a data line, a
8 source, and a drain, wherein the source and the
9 drain are formed corresponding to both sides of
10 the gate, respectively, the source is
11 electrically connected to the data line, the data
12 line is substantially perpendicular to the gate
13 line, the drain has a first side overlapping the
14 gate and a second side overlapping the
15 compensation structure, wherein the first side is
16 opposite to the second side;
17 wherein there is an acceptable alignment shift range
18 between the first process layer and the second
19 process layer, the sum of the capacitance of a
20 first parasitic capacitor between the first side
21 of the drain and the gate and a second parasitic
22 capacitor between the second side of the drain
23 and the compensation structure maintain a
24 substantially constant value within the
25 acceptable alignment shift range.

1 12. The device as claimed in claim 11, wherein the
2 compensation structure extends from the gate line.

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1 13. The device as claimed in claim 11, wherein the
2 compensation structure extends from the gate.

1 14. The device as claimed in claim 11, wherein the
2 compensation structure comprises two portions, wherein one
3 portion extends from the gate line and the other portion
4 extends from the gate.